



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,179	07/11/2001	David M. Sellepack	026977-0109	9363
26371	7590	05/20/2004	EXAMINER	
FOLEY & LARDNER 777 EAST WISCONSIN AVENUE SUITE 3800 MILWAUKEE, WI 53202-5308			MUSSEY, BARBARA J	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,179

Applicant(s)

SELLEPACK, DAVID M.

Examiner

Barbara J. Musser

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 and 49-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 and 49-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/19/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not disclose the presence of both a chlorinated polyolefin and a reactive cross-link adhesive in the bonding layer but rather indicates the reactive cross-link adhesive is a chlorinated polyolefin. It is suggested this claim be canceled.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 3, 28, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what is meant by the sheets having "at least x percent shrinkage from its total shrinkage". It is suggested this be changed to having --at least x percent shrinkage of its total shrinkage--.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4, 5, 7-10, 16, 17, 19-27, 31, 32, 50-52, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roys et al.(U.S. Patent 6,284,183) in view of Reese(U.S. Patent 3,010,861).

Roys et al. discloses forming a three-dimensional structure by extruding a polymer sheet 0.25 inches thick, joining a laminate comprising a paint film and a bonding layer to the sheet, and thermoforming the composite.(Col. 2, ll. 40-52; Col. 3, ll. 1-2; Col. 5, ll. 15-32) The bonding layer is a chlorinated polyolefin.(Col. 11, ll. 24-29) Thermoforming is a process wherein a sheet is heated until it deforms to take the shape of the mold surface it is held against.(Figure 6) The reference does not explicitly state the thermoforming into a three dimensional structure is done in a mold. The definition of thermoforming is that the plastic is heated until it softens and takes the shape of the mold surface the final product is intended to be. It would have been obvious to one of ordinary skill in the art at the time the invention was made to thermoform to form a three-dimensional shape in a mold as this is the conventional definition of thermoforming.

The reference does not disclose the bonding layer directly contacts the substrate but rather joins it to a backing layer which contacts the substrate. Reese discloses

Art Unit: 1733

forming a three-dimensional structure by extruding a polymer sheet, joining a laminate comprising a paint film and a bonding layer by contacting the bonding layer directly with the sheet, and thermoforming the composite.(Col. 1, ll. 41-45; Col. 2, ll. 67-72; Figure 1) This type of laminate is particularly adapted to be bonded to a sheet immediately after extrusion(Col. 1, ll. 41-44) and is sturdy enough to be used as a plaque or sign.(Col. 3, ll. 52) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the paint film/bonding layer laminate of Roys et al. to the substrate without an intervening backing layer since Reese discloses this type of substrate is particularly adapted to be bonded to a substrate immediately after extrusion and since this type of transfer reduces the amount of cracking and blistering in the final product.(Col. 1, ll. 19-24)

Regarding claims 4 and 5, since the laminate is joined to the sheet via the adhesive at a given temperature, one in the art would understand that the adhesive would be joined at or above its activation temperature as below the activation temperature, the adhesive would not bond the laminate to the sheet. The sheet is extruded above 350F.(Col. 8, ll. 25)

Regarding claims 7 and 8, the sheet is laminated to the laminate at a temperature significantly lower than the extrusion temperature.(Col. 8, ll. 23-38)

Regarding claims 9, 10, and 26, the reference does not disclose the temperature of the sheet being below 190F when it is bonded to the laminate. However, it does disclose that the temperatures can be adjusted to ensure the optical clarity of the paint film.(Col. 8, ll. 40-44) One in the art would appreciate that the temperature used would

Art Unit: 1733

depend on the paint composition used as different paints would retain their optical clarity at different temperatures and would bond the paint film to the sheet at different temperatures dependent on the paint composition. Only the expected results would be achieved.

Regarding claims 16 and 31, Roys et al. discloses the bonding layer can be 0.1-1 mil thick.(Col. 5, ll. 51-53)

Regarding claim 17, Roys et al. discloses the paint layer and clear layer combined can be 1-3 mils thick(Col. 4, ll.19-20, 64-65) and the bonding layer can be 0.1-1 mil thick(Col. 5, ll. 51-52) Therefore, the total thickness can 1.1-4 mils.

Regarding claim 19, Roys et al. discloses the polymer sheet can be polyethylene.(Col. 8, ll. 14)

Regarding claim 20, while Roys et al. does not explicitly state the polymer sheet is composed only of polyethylene, the reference states it can be made from polyethylene(Col. 8, ll. 14) and that fillers can be used. This indicates that fillers are not required. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the polymer sheet only from polyethylene as the reference indicates that fillers are not required, indicating the substrate can be composed of only polyethylene.

Regarding claim 21, Roys et al. discloses the paint layer can have a clear coat composed of polyvinylidene fluoride on it.(Col. 4, ll. 24-25)

Regarding claims 22-25, while the reference only discloses the paint layer may have pigment, one in the art would appreciate that it is well-known to form paint films

Art Unit: 1733

with a variety of designs ranging from dots to camouflage dependent on the final end product. One in the art would appreciate that any of the well-known paint film designs such as camouflage could be used. Only the expected results would be achieved.

7. Claims 6, 11-15, 30, 49, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roys et al. and Reese as applied to claims 1, 27, and 52 above, and further as evidenced by the admitted prior art.

Roys et al. discloses using a chlorinated polyolefin to bond the paint film to the sheet.(Col. 11, ll. 24-29) According to the admitted prior art, such adhesives are covalent crosslinking adhesives with activation temperatures of approximately 270F.[0034]

Regarding claim 49, while the reference does not disclose the specific temperature at which the laminate and substrate are bonded, one in the art would understand that the layers would be bonded above the adhesive activation temperature, which for a chlorinated polyolefin is 270F. One in the art would appreciate that the closer the laminate was to its activation temperature the less time occurred before the layers were firmly bonded and therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the layers together close to but above the adhesive activation temperature since that would insure the layers were firmly bonded together in the shortest amount of time.

Regarding claim 53, since the laminate is joined to the sheet via the adhesive at a given temperature, one in the art would understand that the adhesive would be joined

at or above its activation temperature as below the activation temperature, the adhesive would not bond the laminate to the sheet.

8. Claims 2, 3, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roys et al. and Reese as applied to claims 1 and 27 above, and further in view of Hooper et al.(U.S. Patent 5,800,657).

The reference cited above does not disclose allowing the sheet to cool until at least 90% of its shrinkage has occurred before applying the paint film. It is well-known in the bonding arts that extruded materials tend to shrink after extrusion as shown for example by Hooper et al. which discloses that plastics can shrink as much as 1% of their length after extrusion upon cooling.(Col. 1, ll. 32-39) It would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the sheet to cool enough that the vast majority of shrinkage had occurred before applying the paint laminate as otherwise the laminate would crinkle as the sheet shrank forming unsightly patterns in the paint.

9. Claims 18 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Belyeu(U.S. Patent 6,394,020), Roys et al. and Reese.

The admitted prior art discloses applying paint to a mold surface and injecting resin prior to rotational molding to form a canoe.[0005] It also suggests that one in the art would look to the automobile panel arts.[0007] It does not disclose applying a preformed paint laminate to an extruded substrate and thermoforming them. Belyeu discloses thermoforming a substrate to form a canoe, but does not disclose how to

Art Unit: 1733

apply paint to it.(Col. 4, ll. 30-33) Roys discloses applying a paint laminate having a chlorinated polyolefin adhesive to a substrate and thermoforming the combination.(Col. 1, ll. 7-12; Col. 11, ll. 24-29) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Roys et al. to form the canoe of the admitted prior art since the admitted prior art suggests looking in the automobile panel art, since Belyeu discloses it is known to thermoform a substrate to form a canoe and that thermoformed canoes are less likely to break or collapse around the paddler(Col. 2, ll. 15-22), and since Roys et al. discloses the method of Roys et al. allows the use of filler which can otherwise degrade the paint film reducing the cost of the overall product.(Col. 2, ll.19-22)

The reference does not disclose the bonding layer directly contacts the substrate but rather joins it to a backing layer which contacts the substrate. Reese discloses forming a three-dimensional structure by extruding a polymer sheet, joining a laminate comprising a paint film and a bonding layer by contacting the bonding layer directly with the sheet, and thermoforming the composite.(Col. 1, ll. 41-45; Col. 2, ll. 67-72; Figure 1) This type of laminate is particularly adapted to be bonded to a sheet immediately after extrusion.(Col. 1, ll. 41-44) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the paint film/bonding layer laminate of Roys et al. to the substrate without an intervening backing layer since Reese discloses this type of substrate is particularly adapted to be bonded to a substrate immediately after extrusion and since this type of transfer reduces the amount of cracking and blistering in the final product.(Col. 1, ll. 19-24)

Regarding claims 22-25, while the reference only discloses the paint layer may have pigment, one in the art would appreciate that it is well-known to form paint films with a variety of designs ranging from dots to camouflage dependent on the final end product. One in the art would appreciate that any of the well-known paint film designs such as camouflage could be used. Only the expected results would be achieved.

Response to Arguments

10. Applicant's arguments filed 1/23/04 have been fully considered but they are not persuasive.

Regarding applicant's argument that Roys et al. does not disclose a the bonding layer comprising a chlorinated polyolefin which is in direct contact with the substrate, Reese discloses the adhesive, which in Roys et al. is chlorinated polyolefin, is in direct contact with the substrate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(571) 272-1222**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

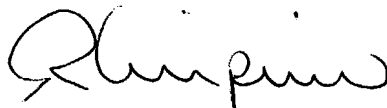
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



BJM



RICHARD CRISPINO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700